UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,667	01/11/2002	Brian C. Barnes	2000.057000/TT4090	9420

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ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/044,667	BARNES ET AL.
	Examiner	Art Unit
	VAN H. NGUYEN	2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _15 June 2005_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-26_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-23, 25, and 26_ is/are rejected.

7) ☒ Claim(s) _24_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _6/17/05_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-26 are presented for examination.

2.   The cross reference related to the application cited in the specification must be updated

(i.e., update the relevant status, with PTO serial numbers or patent numbers where

appropriate, on the amendment filed 6/15/05). Correction is required.

3.   Claims 1-11 and 24 are objected to because the claimed invention reads on a mental

process or the manipulation of an abstract idea. The claim limitations are not explicitly

directed toward steps being implemented on a computer, computer readable medium, or

other statutory device. As such, they could be carried out mentally in conjunction with

pen and paper. The claimed steps do not define a machine or computer implemented

process (see MPEP 2106). Therefore, the claimed invention is directed to non-statutory

subject mater. (The Examiner suggest Applicant to change "a method" to "a computer

implemented method" in the preamble to overcome the outstanding 35 U.S.C. 101

rejection.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming
the subject matter which the applicant regards as his invention.

5.   Claims 4-5, 8-11, 15, and 20-21 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

(i)   As to claim 4, the phrase "a secondary table" (line 3) renders the claim

indefinite. It is unclear if it is referring to "a secondary table" recited in

claim 1.

(ii)   As to claim 4, the phrase "at least one virtual memory table" (line 6)

renders the claim indefinite. It is unclear if it is referring to "at least one

virtual memory table" recited in claim 1.

(iii) As to claim 8, the phrase "a secondary table" (line 9) renders the claim

indefinite. It is unclear if it is referring to "a secondary table" recited in

line 4.

(iv)   As to claim 15, the phrase "a virtual memory access table" (line 2) renders

the claim indefinite. It is unclear if it is referring to "at least one virtual

memory table" recited in claim 13.

(v)   As to claim 15, the phrase "a secondary table" (line 2) renders the claim

indefinite. It is unclear if it is referring to "a secondary table" recited in

claim 13.

(vi)   As to claim 20, the phrase "a secondary table" (line 5) renders the claim

indefinite. It is unclear if it is referring to "a secondary table" recited in

claim 17.

      (vii)   As to claim 20, the phrase "at least one virtual memory table" (line 8)

renders the claim indefinite. It is unclear if it is referring to "at least one

virtual memory table" recited in claim 17.

5.   Dependent claims 5, 9-11, and 21 are rejected for fully incorporating the deficiencies of

their base claims.

Claim Rejections - 35 USC § 102

6.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

7.   Claims 1-4, 6-20, 22, 23, 25, and 26 are rejected under 35 U.S.C. 102(e) as being

anticipated by **McKee** (US 6,745,307 B2).

8.   <u>**As to claim 1:**</u>

McKee teaches the invention as claimed including a method *(e.g., method and system for*

controlling areas of memory within a computer to routines executing at a specific

privilege level; see the Abstract), comprising:

    a.   executing a software object *(e.g., routines executing; see the Abstract/executing*

process; col.8, lines 1-5 and col.13, lines 10-13);

    b.   establishing a security level for the software object *(e.g., specifies the privilege*

level required of an accessing process; col.8, lines 9-13); and

c.   performing a virtual address based memory access *(virtual memory address)*

using the security level *(see the virtual memory address discussion, beginning at*

col.7, line 35), performing the virtual address based memory access comprising

using a secondary table *(e.g. , the virtual page table 602)* and at least one virtual

memory *(e.g., the virtual page table 604) [see fig.6 and the use of multiple tables*

discussion beginning at col.8, line 46].

9.   **As to claim 2:**

McKee teaches using a processor *(e.g., the processor; col.7, lines 66-67)* to process

software code of the software object.

10.   **As to claim 3:**

McKee teaches assigning a security level relating to a memory access of at least a portion

of a memory *(e.g., memory access is provided only to routines running at those privilege*

levels at which a particular region of memory is intended for access; col.13, lines 6-8).

11.   **As to claim 4:**

McKee teaches:

a.   establishing a secondary table *(e.g. , the virtual page table 602; see fig.6)*;

b.   receiving a memory access request based upon executing of the software object

(e.g., the application routine makes a system call which promotes 812 privilege

level to privilege level 0; col.9, lines 43-44);

c.   performing the virtual address memory access based upon the memory access

request *(see the virtual memory address discussion, beginning at col.7, line 35)*

using the secondary table and at least one virtual memory table *(e.g., the virtual*

page table 604) [see fig.6 and the use of multiple tables discussion beginning at

col.8, line 46]; and

d.   accessing a portion of a memory based upon the virtual address memory access

(see the virtual memory address discussion, beginning at col.7, line 35).

12.   **As to claim 6:**

McKee teaches:

a.   determining at least one security level that corresponds to a segment in the

secondary table *(e.g., see fig. 7 and the associated text)*;

b.   verifying a match between an execution security level to a security level

associated with a segment being accessed in response to an execution of the

object *(e.g., col.8, lines 25-45)*,

c.   determining a virtual memory address based upon the secondary table in response

to a match between the execution security level and the security level associated

with the segment being accessed *(col.8, lines 25-45)*; and

d.   locating a physical memory location corresponding to a virtual memory address

(e.g., find a memory page in physical memory corresponding to a virtual memory

address; col.8, lines 47-48).

13.   **As to claim 7:**

McKee teaches:

a.   determining a physical address from the virtual memory table *(e.g., the virtual*

page table 602 includes a bit field 612 indicating whether or not the physical

· *address is valid; col.8, lines 60-62)*;

      b.   determining a segment being executed based upon the physical address *(e.g.,*

                    selects a memory page within physical memory; col.8, lines 62-66); and

      c.   defining a current security level *(e.g., the current privilege level; col.9, lines 36-*

                    67), based upon the determining of the segment being executed.

14.   **As to claim 25:**

McKee teaches executing a function *(e.g., read, write, execute; see col.8, lines 3-24; see*

also fig.7 and the accompanying text beginning at col.9, line 5) of the object based upon

said virtual address based memory.

15.   **As to claim 12:**

Note the rejection of claim 1 above. Claim 12 is the same as claim 1, except claim 12 is

an apparatus claim and claim 1 is a method claim.

16.   **As to claims 17-20, 22, 23 and 26:**

Note the rejection of claims 1-4, 6, 7, and 25 respectively. Claims 17-20, 22, 23, and 26

are the same as claims 1-4, 6, 7, and 25, except claims 17-20, 22, 23, and 26 are computer

readable claims and claims 1-4, 6, 7, and 25 are method claims.

17.   **As to claim 13:**

The rejection of claim 1 above is incorporated herein in full. Additionally, McKee

further teaches a processor *(e.g., processor 108; fig. 1)*, a bus *(e.g., internal bus 116;*

col.1, lines 41-42), a memory unit *(e.g., memory 110, 112, 114; fig. 1)*, and a memory

access interface *(e.g., internal bus 117; fig. 1)*.

18.   **As to claim 14:**

McKee teaches at least one microprocessor *(e.g., microprocessors 124-129; fig. 1)*.

14 and fig. 7) based upon a virtual address *(e.g., virtual page address; col.8, lines 47-54)*; and

d.   accessing a portion of a memory based upon the security level and the virtual address *(see the virtual memory address discussion, beginning at col.7, line 35)*

22.   **As to claims 9-11:**

They include the same limitations as claims 2, 3, and 7, respectively, and are similarly rejected under the same rationale.

Allowable Subject Matter

23.   Claims 5 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24.   Claim 24 appears to be allowable over the prior art of record, subject to the objection above and subject to a final search.

Response to Arguments

25.   Applicant's arguments filed June 15, 2005 have been fully considered but they are not persuasive.

26.   In the remarks, Applicant argued in substance that McKee does not teach, disclose, or suggest all of the elements of claim 1 (as amended) of the present invention. For

example, the virtual memory access called for claim 1 of the present invention calls for

performing a virtual address based memory access is based on a secondary table and at

least one virtual memory table.

27.   Examiner respectfully traverses Applicant's remarks.

28.   McKee does teach performing a virtual address based memory access *(see the virtual*

memory address discussion, beginning at col.7, line 35) is based on a secondary table

(e.g. , the virtual page table 602) and at least one virtual memory table *(e.g., the virtual*

page table 604) [see fig.6 and the use of multiple tables discussion beginning at col.8,

line 46].

29.   Applicant is advised that they are responsible for the entire contents of the cited

references and relevant passages other than those cited by the Examiner should be

addressed accordingly.

30.   Accordingly, McKee meets the limitations as broadly claimed by the Applicant.

Conclusion

31.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

32.   A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

33.   Any inquiry or a general nature or relating to the status of this application should be

directed to the TC 2100 Group receptionist: (571) 272-2100.

34.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to VAN H. NGUYEN whose telephone number is (571)

272-3765. The examiner can normally be reached on Monday-Thursday from 8:30AM -

6:00PM. The examiner can also be reached on alternative Friday.

35.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor Meng-Ai An can be reached on (571) 272-3756.

36.   The fax phone number for the organization where this application or proceeding is

assigned is **571-273-8300**.

37.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

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